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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,755	09/10/2003	Richard A. Dixon	NBLE:007US	4103
26263 7590 08/18/2009 SONNENSCHN NATH & ROSENTHAL LLP P.O. BOX 061080 WACKER DRIVE STATION, WILLIS TOWER CHICAGO, IL 60606-1080				
EXAMINER				
KALLIS, RUSSELL				
ART UNIT		PAPER NUMBER		
1638				
MAIL DATE		DELIVERY MODE		
08/18/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/659,755

**Applicant(s)**

DIXON ET AL.

**Examiner**

RUSSELL KALLIS

**Art Unit**

1638

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2 and 4-50 is/are pending in the application.
- 4a) Of the above claim(s) 36-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-35 and 46-50 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Claims 2 and 4-50 are pending. Claims 36-45 are withdrawn. Claims 2, 4-35 and 46-50 are examined.

Rejections from the previous office action not addressed below are withdrawn.

***Claim Objections***

The claim objection to Claim 7 is withdrawn in view of Applicants' arguments.

***Claim Rejections - 35 USC § 103***

Claims 4-35 and 46-50 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,189,895 (McGonigle, B. and Odell, J.) with the effective filing date of June 13, 2002 (60/388,280) in view WO 00/44909 of published August 3<sup>rd</sup>, 2000; and in further view of Applicant's disclosure of the state of the prior art. This rejection is maintained for the reasons of record set forth in the Official action mailed 7/30/2007, 4/21/2008 and 2/03/2009. Applicant's arguments filed 10/28/2008 and 5/01/2009 have been considered but are not deemed persuasive.

Applicants' assertion that the '895 Patent can not be used as prior art against the instant claims is not persuasive because the evidence submitted in the affidavit does not address all the limitations rejected under 103(a) (response page 16). In general, the claims encompass antisense as a means of down regulation of F3H. Only claim 2 is limited to a mutant of F3H as a means of down regulating the expression of flavanone 3-hydroxylase; and since Applicants' affidavit is drawn only to a mutant background of F3H combined with a heterologous IFS produced isoflavones in Arabidopsis the teaching of unexpected results is not commensurate with the scope of the claims.

Applicants' argument on page 17 of the response that the skilled artisan might further expect that alfalfa would be likely to have control elements that would prevent isoflavonoid biosynthesis in the presence of the IFS gene, such as that found in maize, is not supported by the knowledge common in the art, that alfalfa is a legume and like soybean carries an endogenous isoflavonoid gene and already synthesizes isoflavonoids and is not supported by the teachings in WO 00/44909 of non-leguminous plants tobacco and Arabidopsis transformed with IFS producing isoflavonoids (see WO 00/44909 Examples 10-12). Moreover, one of ordinary skill would be motivated by the success of the WO 00/44909 publication in increasing isoflavonoid production in a legume (soybean) transformed with an isoflavone synthase (see WO 00/44909 Example 15 pages 53-56).

Applicants' arguments in the response on pages 15-16 that the '895 Patent did not teach increased activity of isoflavanone synthase in soybean transformed with C1 and R transcription factors from maize, one of ordinary skill could easily conclude that since transformation with C1 and R increased the total amount of isoflavones in the transformed plants by four fold the activity of the endogenous isoflavone synthase was upregulated as measured by the increase in isoflavonoid product formed. One of ordinary skill in the art would have been led by the '895 Patent to further experimentation to optimize the flux through the isoflavonoid pathway by means of transforming a plant with an isoflavone synthase known to be the required factor for biochemical synthesis of isoflavonoids as taught by WO 00/44909.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

No claim is allowed.

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL KALLIS whose telephone number is (571)272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Russell Kallis/  
Primary Examiner, Art Unit 1638  
August 13, 2009